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ABSTRACT

In July and August 1975, 138 rural residents of Armstrong County, Pennsylvania were interviewed as to their behaviors, beliefs, and attitudes regarding the prevention of cancer and coronary heart disease. Respondents were selected by interviewing an adult living on a commercial farm (a farm that either sold $10,000 or more produce per year or the operator worked more than half time on the farm), and then interviewing an adult in the rural nonfarm residence closest to that commercial farm. Interviews were conducted with 71 farm residents and 67 nonfarm residents. Each respondent was asked 167 questions pertaining to: the seriousness and susceptibility of the disease, early detection, their knowledge about the disease, high blood pressure, diet and weight control practices, and medical services. Each person rated eight selected diseases as to their seriousness and susceptibility. Findings included: cancer was felt to be the most serious illness with heart disease ranking second; 29% felt they were likely to have heart disease; 27% perceived themselves as likely to have cancer; 35% could name either 1 or none of the 7 cancer signs; 87% had had their blood pressure checked within the past 18 months; and 66% felt that it was easy to get an appointment with a doctor for a complete physical examination. (NQ)

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HEALTH EDUCATION NEEDS
A SURVEY OF RURAL ADULTS IN ARMSTRONG COUNTY
PENNSYLVANIA, 1975
AN INTERIM REPORT

By

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and
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Paper Number 8

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INTRODUCTION

Americans spend a great deal of money as individuals each year in efforts to keep healthy. In 1975 this amount is estimated to be 118.5 billion dollars (Abelson, 1976:619). Our magazines and newspapers frequently publish articles about illnesses and their treatment or prevention. The federal government's budget for health research in 1972 was 1.8 billion (Cooper, 1973:7).

Even though health in general is usually viewed as important, all health problems do not have equal importance over time. Through scientific discoveries and technological advances many causes of illness and death have been substantially reduced. One of the most dramatic instances of this in recent times is the use of vaccine for paralytic poliomyelitus prevention. The 1958 peak of 6,031 cases in the United States may be compared with only 40 cases reported a decade later (Langmuir, 1959; Hopkins, 1969). Similarly, the occurrence or seriousness of many other illnesses of an acute nature have been reduced.

Increasing attention is being given to illnesses of a chronic character such as cancer and coronary heart disease. These diseases now rank among the two most frequent causes of death or mortality in the general population of Pennsylvania (Natality and Mortality Statistics, 1973:v-vi). Further, using arteriosclerosis and hypertensive diseases as a means of estimating the economic costs of heart disease, a 1972 task force report estimates the direct annual cost of these illnesses at $4.3 billion (National Institutes of Health, 138).

For this study, these two most frequent causes of mortality are emphasized. Behaviors, beliefs, and attitudes related to preventing rather than treating these illnesses form the basis for this report.

SOURCE OF THE INFORMATION

In July and August, 1975 a probability sample of 138 persons living in rural areas in Armstrong County, Pennsylvania were interviewed. The sampling procedure called for selecting a commercial farm residence, interviewing an adult living in that household, and then interviewing an adult in the rural nonfarm residence closest to that commercial farm. Seventy-one farm respondents (21 men and 50 women) and 67 nonfarm respondents (19 men and 48 women) were interviewed. They represented about 14 percent of all adults living on commercial farms in this county and .12 percent of all rural nonfarm adults in the county respectively. [1]

During a face-to-face interview setting, each respondent was asked 167 questions. The interviewers recorded their responses which were later summarized using Penn State's computer facilities. [2]

RESULTS

Seriousness and Susceptibility

Each person rated eight selected diseases regarding their seriousness and susceptibility. Seriousness was defined in terms of the respondents' personal situation. The individuals' judgement of susceptibility was made on the basis of their own experience, knowledge, and personal observations. Cancer was perceived to be the most serious of all eight illnesses with heart disease ranking second (Table 1). The contrast between these two leading causes of mortality (rows 1 and 2) and headaches and colds (rows 7 and 8) suggests that individuals' judgements of seriousness were reliable.

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[1] A commercial farm is defined as one that either sells $10,000 or more produce per year or the operator works more than one-half of his/her time on the farm. A small number of special cases that did not meet these criteria were included because of other characteristics reported by key informants in the county.

[2] The Statistical Programs for Social Sciences system (SPSS, version 6) was used (Nye, 1974).

Table 1. Rating of Perceived Effect of Selected Diseases 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Disease*	Degree of Changes Required					
	Major	Some	Uncertain	Few	None	Total
	(Read across for 100 percent)					
Heart Disease	44	37	7	10	2	100
Cancer	47	31	14	6	2	100
Emphysema	34	41	8	12	5	100
Glaucoma	37	34	14	11	4	100
Diabetes	22	38	4	25	11	100
Stomach Ulcers	16	46	6	27	5	100
Colds	2	9	1	33	55	100
Headaches	3	7	7	29	54	100

*Not answering were 4, 8, 5, 6, 8, 3, 2, and 3 persons, respectively, for each disease.

Further, the high percentage of respondents judging cancer and heart disease as serious enough to require changes in their present life (78 and 81 percent respectively) means that educational efforts may be directed at other dimensions of their prevention. People already believe these are serious; now, what should they do about them?

One's motivation to adopt recommended health practices is not based solely on perceptions of seriousness. Persons may ask,"But, what are my chances of getting sick with this disease?" The data in Table 2 show that 29 percent of the respondents perceive themselves as either likely or very likely to have heart disease. A slightly smaller percentage, 27, believe themselves likely to have cancer. [3] The threat of one of these serious diseases is, thus, sufficiently high to suggest that a sizeable minority of the population studied may be ready to adopt recommended practices to prevent these diseases if they have not already done so.

[3] This perceived rate may be compared with the national rate of actual occurrence of 25 percent (American Cancer Society, 3).

Table 2. Rating of Susceptibility to Selected Diseases 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Disease*	Susceptibility Rating: Very Likely	Likely	Depends	Unlikely	Very Unlikely	Total
	(Read across for 100 percent)					
Common Cold	14	26	13	35	12	100
Headaches	8	30	15	32	15	100
Heart Disease	11	18	16	41	14	100
Cancer	5	22	20	43	10	100
Diabetes	9	17	8	41	25	100
Stomach Ulcers	8	15	16	47	14	100
Glaucoma	3	12	13	54	18	100
Emphysema	3	6	12	57	22	100

*Not answering were 2, 1, 14, 22, 12, 5, 19, and 11 persons, respectively, by disease.

Early Detection and Knowledge About Cancer

Research on rates of occurrence of cancer and subsequent mortality has shown that "more people die of cancer which could have been cured or prevented than of cancer for which a cure has yet to be found"(American Cancer Society,4). Thus, it is important to know how useful persons feel early detection is in cancer treatment. Seventy-three percent of those responding strongly agreed that many types of cancer detected in the early stages can be cured (Table 3). Only three persons out of 138 disagreed.

Table 3. Opinion Rating about Statement: "Many types of cancer detected in the early stages can be cured." 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Opinion	Percentage
Strongly Agree	73
Agree a Little	20
Depends	4
Disagree a Little	1
Strongly Disagree	1
Do Not Know	1
Total	100

In contrast to the importance of early detection, however, were individuals' knowledge of the warning signals of cancer as suggested by the American Cancer Society (Table 4A). On the basis of immediate recall, 35 percent of those interviewed could name either one or none of the seven signs. On one hand, educators may be encouraged by the high agreement over the value of early detection. On the other hand, current knowledge among this population seems sufficiently low to suggest a continuing need for programs to acquaint persons with the warning signals.

Table 4A. Number of Cancer Signals Recalled 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Number of Cancer Signals Recalled	Percentage
None	25
1	9
2	12
3	19
4	20
5	10
6	4
7	1
Total	100

Of specific interest may be signals associated with high rates of occurrence and cure. The estimated number of new cases of cancer per year for the breast and uterus sites are 40 percent of all cases. And, five-year cancer survival rates for these sites are 84 and 82 percent respectively (American Cancer Society, 8). The data in Table 4B show that the warning signals associated with these sites are known most commonly. More than half of the respondents correctly identified these warning signals.

Table 4B. Respondents' Knowledge of Seven Warning Signals by Individual Signals 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Signal	Percent Recalling Warning Signal: Correct	Do Not Know	Total
Thickening of lump in breast or elsewhere	60	40	100
Unusual bleeding or discharge	50	50	100
Nagging cough or hoarseness	36	64	100
A sore that does not heal	33	67	100
Obvious change in wart or mole	33	67	100
Change in bowel or bladder habits	31	69	100
Indigestion or difficulty in swallowing	14	86	100

Given that cancer is the leading cause of death among women 30-54 (American Cancer Society,6), this study also asked the 98 women about a Pap test. * Three out of five of the women in this population reported having a Pap test in the past year (Table 5A). This finding is similar to that of a national sample of women aged 17 and over, 61 percent of whom had a Pap test in the

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* Pap test here refers to the Papanicolaou test for cervical cancer.

year prior to being interviewed(Vital Statistics, 1975). Those women not having a Pap test, when asked why they had not done so, responded most frequently by saying, "I didn't need it", or "I didn't think of it"(Table 5B).

Table 5A. Participation in Selected Preventive Health Practices During the Past 12 Months,Percentages 1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)

Preventive Health Practice	Percentage		
	Yes	No	Total
Physical Exam	68	32	100
Dental Checkup (1)	68	32	100
Pap test (2)	58	42	100
Eyes Examined	49	51	100
Chest X-Ray	33	67	100

(1) Excludes 33 persons reporting dentures.

(2) Women only, N=95 (3 women did not answer).

Table 5B. Respondents' reasons for Non-Participating in Selected Preventive Health Practices During the Past 12 Months, Percentages 1975 Armstrong County Preventive Health Educational Needs Inventory (1)

Barrier to Having the Preventive Work Done in the Past 12 Months	Physical Exam	Chest X-Ray	Dental Checkup	Eye Exam	Pap Test
I didn't need it...	56	44	60	59	52
I didn't think of it...	13	18	6	10	12
I was too busy...	8	11	3	3	3
I didn't have transportation...	0	3	6	2	0
I wasn't free to go when they were open...	0	11	0	0	3
I didn't want to spend the money...	0	0	3	6	0
I couldn't get anyone to see me...	0	0	3	0	0
Other...	23	13	19	19	30
	100	100	100	100	100
No. Not Answering	4	1	2	2	7

(1) The respondents who replied "no" for a practice in Table 5A were also asked the most important reason for not doing it (barrier to use).

While a few of these persons may not have actually needed a Pap smear because of medically sound reasons, surely 52 percent of this category could not be excluded from need for that reason.[5]

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[5] While some may believe post-menopausal women are not at risk due to uterine or cervical cancers, 1973 data show these cancers rank 4th and 5th respectively as causes of death for women in age categories 55-74 and 75 and over (American Cancer Society, 13).

It is notable that reasons related to access such as availability, cost and convenience were rarely cited as reasons for not having a pap test. Small percentages occur for other preventive health practices in these categories (Table 5B).

The situation may, therefore, be better defined as a problem in education rather than community service access. The educator's task is formidable. It has been demonstrated that for selected situations approximately 10 percent of health behavior is related to health knowledge (Dowell, 1969). Regardless of the fact that cancer is perceived to be serious and early detection is seen as effective, a large portion (42%) of women in this study population did not place the Pap test as a health maintenance behavior high enough among their personal priorities to go and have a Pap smear made. The educational programs may, therefore, have to emphasize motivation as much or more than knowledge.

Heart Disease and High Blood Pressure

Heart disease is the leading cause of death in the United States and Pennsylvania. * It is not surprising to find, therefore, among rural men and women interviewed for this study, a high level of concern about this disease. Twenty-nine percent of these persons felt they were likely to have heart disease. Its seriousness as an illness is reflected in that 81 percent saw it as serious or very serious.

Associated with the frequency of occurrence of heart disease are what are called risk factors such as high blood pressure, overweight and lack of regular physical exercise. Among a national sample of white adults aged 18 to 74 years the prevalence rate for significantly high blood pressure was reported to be (Roberts, 1975:19):

Sex	Age	Rate Per 100 Persons
Men	18-44	21
	45-59	45
	60-74	39
Women	18-44	11
	45-59	29
	60-74	36

Respondents living in rural areas in this county reported rates of 26 and 12 per 100 for males and females respectively (Table 7). In addition, those persons reporting normal blood pressure were asked about having their blood pressure checked (Table 6). While 93 percent reported having their blood pressure checked at some time in the past, a lower percentage, 87, reported doing so in the past 18 months. Persons in the more susceptible age categories (45 and over) do not have higher rates of checks than do those in the 18-44 category.

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* While the heart disease mortality rate in Pennsylvania in 1973 was 440 per 100,000 mid-year population, the cancer (malignant neoplasms) mortality rate for the same year was 192. By comparison, the mortality rates for cerebrovascular disease and accidents were 105 and 42 respectively (Natality and Mortality Statistics, 1973:6). For further comparison see Jurkat (1974).

Table 6. Year of Most Recent Blood Pressure Check for Persons Reporting Normal Blood Pressure
1975 Armstrong County Preventive Health Educational Needs Inventory (N=103)*

Year	Percentage
1975	64
1974	23
1973	4
1972 and before	9
Total	100

*Excludes 33 cases reporting high blood pressure or not able to recall.

Table 7. Respondents' Self-Reported Blood Pressure
1975 Armstrong County Preventive Health Educational Needs Inventory (N=134)

	Percentage
I do have high blood pressure...	16
I do not have high blood pressure...	84
Total	100

Not answering were 4 persons.

Eighty-five percent of the respondents reported having their blood pressure checked while visiting a doctor's office (Table 8). Since 79 percent of all persons interviewed had visited a physician in the past year for either acute or preventive health reasons, it does not seem reasonable to try to increase the blood pressure checking rate by encouraging a more uniform application of this practice at such times.

Table 8. Location at which Blood Pressure was Checked for Those Persons Reporting Normal Blood Pressure 1975 Armstrong County Preventive Health Educational Needs Inventory (N=107)*

Location	Percentage
Individual checkup or physical examination	67
While being treated for an illness or injury	18
Screening Program	9
Other	6
Total	100

*Not answering was one person.

The potential for acceptance of treatment of high blood pressure may be high once it is diagnosed. Nearly all persons interviewed (92 percent) felt that high blood pressure can be reduced and were aware of one or more ways in which this could be accomplished. One may speculate, nevertheless, that the actual treatment regimen invclving daily medication may involve considerable problems. Instituting a practice to the level of a habit clearly depends on more than knowing that the medication, once taken, has the desired effect.

Heart Disease and Overweight

While this study did not include physiological measures of overweight or obesity, it did inquire into practices and feelings about diet and weight control. A little more than one-third of the rural farm and nonfarm men and women reported never or only occasionally consciously observing dietary rules (Table 9).

Table 9. Eating Habits, Weight Control, and Dieting
1975 Armstrong County Preventive Health
Educational Needs Inventory (N=138)

	Never or Occasionally	Uncertain	Usually or Always	Total
Careful Eater (1)	40	1	59	100
Regulate Diet (2)	36	1	63	100

(1) "I am careful about how much I eat."

(2) "I am careful about what kinds of food I eat."

In addition, respondents evaluated the degree of difficulty they had in regulating their diet (Table 10). Only 12 percent of the respondents felt that dietary regulation was difficult (15 percent for men and 10 percent for women).

Table 10. Difficulty for Regulating Diet, Getting Physical Exercise, and Taking Medicine*
1975 Armstrong County Preventive Health
Educational Needs Inventory (N=138)

	Very Easy or Easy	Average	Difficult or Very Difficult	Total
	(Read across for 100 percent)			
Diet (1)	67	21	12	100
Exercise (2)	71	22	7	100
Medicine (3)	86	7	7	100

*"How difficult would it be for you to do each of these:
(1) regulate the kinds of food you eat?"
(2) get regular physical exercise?"
(3) take medicine on a regular basis?"

Not answering were 2, 2, and 1 person respectively for each activity.

The results of a program for detecting health problems among adults living in rural areas of Pennsylvania show that obesity is

the most important problem among persons screened (Pa. Dept. Agric.:6). The facts obtained by the present study suggest two conclusions. First, if the incidence of obesity among these rural farm and non-farm men and women is at all similar to the population in the health problems screening program, there surely is an excessive degree of risk of heart disease being borne by the respondents. Second, while a sizeable minority of respondents may already be following recommended dietary practices to attain or maintain desirable weight levels, a significant minority of persons appear to feel their diet is not of concern to them.

These findings indicate perhaps that the relationship between heart disease and obesity is not as well known or understood as that between high blood pressure and heart disease.

Medical Services

Although availability of medical services was not central to the question assessing the preventive health education needs of the rural population in Armstrong County, the topic is of sufficiently broad interest to be studied and discussed. Sixty-six percent of those responding felt that it was either easy or very easy to get an appointment with a doctor for a complete physical examination, while 22 percent felt that it would be difficult or very difficult.

On a slightly different issue, respondents assessed their probable use of allied health personnel (Table 11). Perhaps of greatest interest in this era of the mid-level practitioner (medical associate, physician's assistant, nurse practitioner) is the fact that 94 percent of those interviewed indicated a willingness to consider treatment by these persons.

Table 11. Rating on Attitudes Toward Allied Medical Personnel
1975 Armstrong County Preventive Health Educational Needs Inventory (N=138)
Response to question "I would accept medical help from a physician's assistant such as a nurse practitioner, Medex, or family health specialist, working under the direct supervision of a doctor."

Response	Percentage
Always	59
Usually	22
Occasionally	13
Never	4
Uncertain	2
Total	100

Number not answering, 3.

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